

REMARKS

Applicant thanks the Examiner for the careful review of this application. Claims 23 and 27-28 were canceled without prejudice. Claims 1, 3-8, 11, 14-17, 24-26 and 29-30 were amended to clarify aspects of the invention. Therefore, claims 1-22, 24-26 and 29-32 are currently pending in this application.

CLAIM OBJECTIONS

Claims 30-32 were objected to due to a clerical error in claim 30. Claim 30 was amended to rectify this error. Withdrawal of the objections of claims 30-32 is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 102(a)

Claims 1-2 were rejected under 35 U.S.C. § 102(a) as being anticipated by Gerets (WO 00/15461). Claims 3-6 were rejected under 35 U.S.C. § 102(a) as being anticipated by the admitted prior art.

Gerets apparently discloses a method and apparatus for video processing, wherein possible movement between successive fields of the images split into even and odd is detected and the mode, i.e. video mode or film mode is determined. The method is characterized in that the sequence of movement or standstill between successive fields is detected and this sequence of a number of fields is stored in a memory, followed by said sequence being compared with patterns inherent to the mode and if ordinary video mode is detected, median filtering is carried out whereas, if film mode (2:2 pull-down or 3:2 pulldown) is detected, the median filtering is switched off and in synchronization with the film phase, the even and odd fields which belong together and are derived from one and the same film image are merged again until the original film is obtained and said image is repeated until again a following original film image can be constructed by means of the above-mentioned merging.

The invention of claim 1 is directed to a method for detecting a pulldown technique wherein the relatively high and low values are determined relative to a dynamically adjusted threshold detection level. Preferably, the threshold detection level is based upon a noise level in

the video sequence. Preferably, the noise that the threshold detection level is based on is created by the pulldown technique. Advantageously, this feature avoids the problem in the prior art wherein low values fall below a threshold and as a result the pulldown technique can not be identified. Applicant respectfully submits that neither Gerets nor the admitted prior art teach this feature or any equivalent to this feature.

Claims 3-6 were amended such that they now depend, directly or indirectly from independent claim 1. Claim 2 also depends from claim 1 and therefore claims 2-6 are allowable for at least the same reasons as set forth for claim 1. Withdrawal of the rejections of claims 1-6 is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 102(b)

Claims 30-31 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kasahara (U.S. Patent No. 5,838,381).

Kasahara apparently discloses an image display apparatus that is perhaps capable of displaying both a television signal and an image signal supplied from a personal computer with a high picture quality on a high definition display unit having 1024 by 768 pixels. In order to achieve this object, an image display apparatus according to the present invention includes an NTSC-VGA conversion circuit for converting a television signal to a signal having 640 by 480 pixels and corresponding to the non-interlacing VGA standard, a switch unit for selecting and outputting either the signal outputted from the NTSC-VGA conversion circuit and an inputted image signal from a personal computer, and a VGA-XGA conversion circuit for converting a number of pixels of a signal outputted from the switch unit to a number of pixels 1024 by 768 substantially equivalent to the number of the display unit.

Independent claim 30 is directed to a video system that converts an interlaced video stream into a progressive video stream such that the system includes a field assembly, a source detection module an intra-frame deinterlacer. Advantageously, these components contribute to an

artifact free display regardless of source type transitions. Applicant respectfully submits Kasahara does not include all the limitations of independent claim 30.

Claim 31 depends directly from independent claim 30 and is therefore allowable for at least the same reasons as set forth for claim 30. Withdrawal of the rejections of claim 30-31 is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 102(e)

Claims 30 and 32 were rejected under 35 U.S.C. § 102(e) as being anticipated by Iwaki (U.S. Patent No. 6,567,097). Claims 9-10, 13, 18-23 and 27-28 were rejected under 35 U.S.C. § 102(e) as being anticipated by Adams (U.S. Patent No. 6,380,978). Applicant respectfully traverses for the following reasons. While Applicant does not currently believe it is necessary, Applicant nonetheless reserves the right to swear behind the references used in the 35 U.S.C. § 102(e) rejections.

Iwaki apparently discloses that when video data is odd field data, interlaced data for an even field consisting of all black even line data is appended to that video data by an interlaced data appending circuit. On the other hand, when video data is even field data, interlaced data for an odd field consisting of all black odd line data is appended to that video data by the interlaced data appending circuit. Noninterlaced data generated in this way is noninterlaced-displayed on a display monitor such as an LCD, CRT, or the like.

Adams apparently discloses a digital image enhancer that includes a deinterlacing processor receptive to an interlaced video stream. The deinterlacing processor includes a first deinterlacer and a second deinterlacer and provides a deinterlaced video stream. The digital image enhancer also includes a video output processor receptive to the output of the deinterlaced video stream to provide a scaled, deinterlaced video stream. A portable DVD player including the digital video enhancer has a generally thin prismatic enclosure having a first major surface, a second major surface separated from said first major surface, and side surfaces connecting the first major surface to the second major surface. At least a portion of the first major surface

includes a video display, and the enclosure includes a DVD entry port such that a DVD can be inserted into the enclosure.

Independent claim 30 is directed to a video system that converts an interlaced video stream into a progressive video stream such that the system includes a field assembly, a source detection module an intra-frame deinterlacer. Advantageously, these components contribute to an artifact free display regardless of source type transitions. Applicant respectfully submits Iwakidoes not include all the limitations of independent claim 30.

Claim 32 depends directly from independent claim 30 and is therefore allowable for at least the same reasons as set forth for claim 30. Withdrawal of the rejections of claim 30-31 is respectfully requested.

The inventions of independent claims 9 and 13 is directed to a method for dynamically determining threshold detection levels in a pulldown detection system wherein a threshold detection level is dynamically adjusted. In marked contrast, Adams merely discloses a fixed, programmable threshold. Since it is programmable, it can be changed but is not dynamically adjusted during processing.

A method for processing a progressive source interlaced video stream, as detailed in independent 18, includes post processing of the progressive video stream based upon the determined confidence level. Adams does not teach the use of a confidence level in order to determine post processing. Adams instead monitors for distinct events (for example a source transition) and then takes appropriate action based on that singular event. Advantageously, the present invention monitors a variety of events and based on various combinations of those events, different courses of actions are implemented to improve the quality of the resultant progressive video stream. As a result, a more robust video stream is achieved.

Claims 10 and 19-22 depend from independent claims 9 and 18 respectively and are therefore allowable for at least the same reasons as set forth for claims 9 and 18. Withdrawal of the rejections of claims 9-10 and 18-23 is respectfully requested.

Claims 23 and 27-28 were canceled without prejudice and therefore the rejections of those claims are now moot.

ALLOWABLE SUBJECT MATTER

Applicant thanks the Examiner for noting the presence of allowable subject matter in claims 7, 8, 11, 12, 14-17, 24-26 and 29. Claims 7, 8, 11, 12, 14-17, 24-26 and 29 were rewritten into independent form, including all limitations of the base and any intervening claims. Applicant respectfully requests the withdrawal of the objection of claims 7, 8, 11, 12, 14-17, 24-26 and 29.

The amendment was made to expedite the prosecution of this application. Applicant respectfully traverses the rejections of the amended claims and reserves the right to re-introduce them and claims of an equivalent scope in a continuation application. If the undersigned agent has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

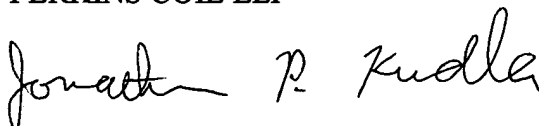
CONCLUSION

Applicant believes that all pending claims are allowable and a Notice of Allowance is respectfully requested.

If the Examiner believes that a conference would be of value in expediting the prosecution of this application, he is cordially invited to telephone the undersigned counsel at the number set out below.

Respectfully submitted,

PERKINS COIE LLP

A handwritten signature in black ink, reading "Jonathan P. Kudla". The signature is written in a cursive, flowing style.

Jonathan P. Kudla

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